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10/509,102	09/27/2004	Nicolas Le Sauze	Q83592	1286

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EXAMINER	
LAI, ANDREW	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,102	LE SAUZE ET AL.	
	Examiner	Art Unit	
	Andrew Lai	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/27/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 9, 10 and 11 are rejected under 35 U.S.C. 112, **first paragraph**, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 9 recites:

> *Method according to claim 4, wherein the free portions of said macropacket are simply analyzed during the step b) consisting of:*
> *b1) sampling a portion of the optical signal received by said intermediate node by means of a sampling coupler (OPC) to convert said portion to an electronic signal, the other portion of the signal remaining in the optical domain,*
> *b2) extracting the header of said macropacket carried by said electronic signal and storing said header in a header buffer memory,*
> ...

According to step b2) above, it is **necessary** that *said electronic signal* **must** contain *the header of said macropacket.* According to step b1), *said electronic signal* is converted from *a portion of the optical signal* which is ***sampled*** out from the *optical signal received by said intermediate node.* Therefore, it is **necessary that said sampling make sure the sampled portion MUST contain said header**. Examiner failed to find corresponding teachings in the Specification. Below are the teachings of **sampling** in the Specification.

Starting line 23 on page 5, the Specification provides:

> In an all-optical system, like that shown in figure 3, it is necessary first of all to detect absences of signal transmission in the input optical signal OPT IN of the node concerned, in order to add signals in the free spaces. A small portion of the input optical signals is therefore **sampled** by an optical coupler (OPC) 10 which sends the **sampled** portion of the optical signal to a photodiode 12 that is coupled to a signal power detector 12 and indicates the presence or absence of optical signals. The mechanism amounts to measuring the power of the received signal...

Starting line 27 on page 11, the Specification provides, when referring to figure 5:

> This verifies the possibility of enlarging the macroslot if sufficient space exists between the end of the current macroslot and the header of the next macroslot. To this end, a small portion of the optical signal OPT IN is therefore **sampled** from the input optical signal by the **sampling** optical coupler (OPC) 10, which sends this portion of the optical signal to a photodiode 12 that is coupled to a signal power detector 14 that indicates the presence or absence of an optical signal. This mechanism amounts to measuring the power of the received signal ...

From these quoted disclosures, Examiner fails to find a teaching or suggestion or implication of a mechanism which **ensures that said sampling MUST contain the head of the micropacket in the "small portion" of the signal to be sampled, which is however required in claim 9 as a NECESSARY step.**

Also, it does not appear to be obvious to one skilled in the art to infer from above teachings of sampling that the header of the macropacket will necessarily be included in *a small portion* of sampled signal. It should be noted that the macropacket as disclosed has its header at the beginning. To have the header **necessarily** be included the sampled portion, the sampling would have to always start from the beginning of the macropacket. However, it would then contradicts to the spirit of the invention because the invention is to find free spaces in the macropacket, which free spaces in generally are far down in the macropacket from the beginning because the source node as well

as upstream intermediate nodes in general put there data in the macropacket, taking up preceding free spaces one after another until they are all taken.

In summary, Claim 9 set forth the limitations without sufficient support from the Specification. Said limitations are unclear and indistinct to the extent that it is impossible to search for prior art. However, an absence of prior art should not be construed as indicating allowable subject matter.

Claims 10 and 11 depends on claim 9 and thus are rejected on the same ground.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 2, 3, 4, 7 and 8 are rejected under 35 U.S.C. 112, **second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 4 both recites:

b) when said resource transits an intermediate node, detecting if said resource comprises...

It is not clear how a resource, which is merely an "*optical resource*" created "*at the source node*" at step a) and thus is some optical signals, can *transits an intermediate node*, which is a physical entity comprised of hardware. Examiner is compelled, in light of the Specification, to read it as

said resource transits through an intermediate node, ...

Claim 1 further recites:

the step b) consists in detecting the absence of optical signals; and
the step c) consists in transmitting said data packet over the network if the step b) has detected absence of any optical signals for a time corresponding at least to the time of said data packet.

It is unclear what said *optical signals* refer to (noting that the purpose of this step was earlier set to detect *free portions* in an *optical resource*). If they refer to the "*optical resource*" created "*at the source node*", then said *optical resource* will always have some *optical signals* because it was created at the source node with *portions containing data packets addressed to said destination node* as well as some *free* [empty] *portions.* Therefore, to make the claim clear and definite, Examiner is compelled, in light of the Specification, to read the recited limitations as:

*the step b) consists in detecting **an** absence of optical signals in at least one portion of said optical resource; and*
*the step c) consists in transmitting said data packet over the network if the step b) has detected **an** absence of any optical signals in at least one portion of said optical resource for a time corresponding at least to the time of said data packet.*

Claim 3 recites:

b1) converting the optical signal received by said intermediate node into an electronic signal,
b2) extract the original data from said optical resource converted into an electronic signal and storing said data in a transit buffer memory, and
b3) detecting the absence of electronic signals if said transit buffer memory is empty

Similar to claim 1, it is not clear if *the optical signal* in b1) is the same as the *optical resource* in b2). If it is, as it should in light of the Specification, then question arises. According to b1), the entire *optical resource* is converted to *an electronic resource*. Then according to b2), operation is performed to **only** *extract the original data* (as only a part of, not the entire, *optical resource*) which are then *stored in a transit buffer.* The only way to do this is for the original data to be non-empty and to be actually and distinctly in the *optical resource*. In other words, if there were no non-empty original data in the *optical resource*, the system would have no way of knowing what to extract and what to ignore in the entire *optical resource.* Therefor, it is inherent that the **transit buffer memory will never be empty as long as step b2) is operable, which in turn makes step b3) non-operable.**

Therefore, the claim language of claim 3 is unclear and indefinite to such extent that it is impossible to search for prior art. However, an absence of prior art should not be construed as indicating allowable subject matter.

Claims 2, depending on claim 1, recites the limitation "*said sampled portion of the optical signal*". There is insufficient antecedent basis for this limitation in these claims. Claim 1 provides neither basis for said limitation nor an operation of sampling the optical resource or signal. Examiner is therefore compelled to read claim 2 as:

... wherein the optical data signals received by said intermediate node are delayed by a delay line for a time corresponding to the time needed to analyze and process said ~~sampled portion of the~~ optical signal.

Claim 7, depending on claim 4, recites the limitation "*said state machine*". Claim 4 provides no basis for said limitation. However, claim 5 provides *means of a state machine.* Therefore, Examiner reads claim 7 as being:

*Method according to **claim 5**, ...*

Claim 8, depending on claim 4, recites, at step c3), the limitations "*said state machine*" and "*delayed by said optical delay line*". Claim 4 provides basis for neither limitation. Considering the fact that claim 5 provides *means of a state machine*, but none of the claims preceding claim 8 and depending from claim 4 provides either an *optical delay line* or a *delay* operation/method, Examiner reads claim 8 as being:

*Method according to **claim 5**, ...*
c3) constructing, under the control of said state machine, a new macropacket resulting from the construction of said modified header, said original data ~~delayed by said optical delay line~~ and said data packet that was previously store in the data buffer memory

Claim Rejections - 35 USC § 102

5. following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 4, 6, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Jha (US 7,006,525).

Jha discloses a "hybrid data transport scheme over optical networks" (col. 1 lines 1-2) comprising the following features.

- **Regarding claims 1 and 4**

dynamic method of adding data at the nodes of a fiber optic transmission network (see "a method and/or architecture for hybrid data transportation" recited col. 1 lines 19-20, for "sending a mix of different data types over a fiber optic network" recited col. 1 lines 21-22, wherein "each node may be configured to receive and/or transmit" recited col. 7 lines 47-48, and the "invention may additionally dynamically manage bandwidth" recited col. 8 lines 64-65) *comprising at least one source node, one destination node and a plurality of intermediate nodes, said nodes being connected by a fiber optic connection* (refer to fig. 10 and see "the system 100 may comprise a number of devices 102a to 102n connected to a network backbone 104" recited col. 9 lines 14-16), *said method comprising the following steps:*

a) creating at the source node an optical resource ("a single SONET SPE [synchronous payload envelope] or data-over-fiber frame", col. 12 line 1) *comprising portions containing data packets addressed to said destination node and free portions* (refer to fig. 14 wherein "a detailed block diagram of the SONET SPE 200 is shown. The SONET SPE 200 may comprise a number of packets 110a-220n and a number of empty packets 222a-222n" recited col. 13 lines 4-7) *that may be occupied by packets supplied by each of said intermediate nodes* (see "nodes on the fiber network 100 may mark different sections of the SONET SPE 200 as reusable by the other nodes 102a-102n" recited col. 13 lines 25-27),

b) when said resource transits through an intermediate node, detecting if said resource comprises free portions if said intermediate node has at least one data packet to transmit (see "if a particular node detects and incoming SONET frame on a receive port, or if there is a frame in the transmit/receive queue, the node checks the frame to see if there are unused/reusable areas in the incoming/queued frame that can be used for sending data" recited col. 16 lines 1-5), *and*

c) adding said data packet to a free portion of the resource if said free portion may contain said data packet (see "if there is enough space available in the frame, the node fills the space with additional data before sending the frame out" recited col. 16 lines 5-7),

which method is characterized in that:

Claim 1, *the step b) consists in detecting an absence of optical signals in at least one portion of said optical resource* (fig. 14 e.g. "empty or reusable space 222a" and refer to fig. 15 and see "The pay load header 204a may be used to tell whether one or more of the empty packets 222a-222n inside the DONET SPE 200 may be reused at an intermediate node" recited col. 13 lines 19-21),

the step c) consists in transmitting said data packet over the network (see "recreating the frame [having empty area] (e.g., after adding packets from local input ports) for outbound traffic" recited col. 13 lines 46-47) *if the step b) detected an absence of any optical signals in at least one portion of said optical resource for a time corresponding at least to the ime of said data packet* (see discussion for step b) above).

Claim 4, *said optical resource is a macropacket* ("SONET SPE [synchronous payload envelope") *comprising a header* (refer to fig. 14 and see "the payload header 104a of the packet 200a" recited col. 13 lines 7-8) (see "the payload header 204a may tell what kind of packet/protocol (such as Ethernet, PPP, IP, Frame Relay, ATM cells, T1, etc.) is inside a payload of the packet 220a" recited col. 13 lines 10-13, and see fig. 18 "check destination node addressing" block) *and data packets supplied at each of said intermediate nodes* (see "the [intermediate] node fills the space with additional data" recited col. 16 line 6); *and*

the step b) consists in determining the free portions of said macropacket by analyzing the content of said header (still refer to fig. 14 see "the payload header 204a may be used to tell whether one or more of the empty packets 222a-222n inside the SONET SPE 200 may be reused at an intermediate node" recited col. 13 lines 19-21).

- **Regarding dependent claims**

Claim 2, *wherein the optical data signals received by said intermediate node are delayed by a delay line for a time corresponding to the time needed to analyze and process said sampled portion of the optical signal* (this is an inevitable and natural outcome in Jha's system because, as disclosed therein, an intermediate node receives a SPE, adding the node's own data to the empty space, if any, in the SPE, and then passes SPE along to the next node. Jha however does not disclose *delayed by a delay line*, which will be discussed further below in subsequent paragraphs).

Claims 5 and 6, *wherein the step b) comprises the following steps:*

b1) converting the optical signal received by said intermediate nodes into an electronic signal bearing said macropacket signal (see "fiber optic network running SONET/SDH framing" recited col. 1 line 22, noting SONET/SDH does O/E and E/O conversion, which is also taught by Jha, see col. 11 lines 13-17),

b2) extracting the header (fig. 14 "104a-204n" showing "payload header") *of said macropacket* (fig. 14 as a whole) *and storing said data in a header buffer memory,*

b3) extracting the original data (fig. 14 "274" showing "...payload...") *from said macropacket* (fig. 14 as a whole) *and storing said data in a transit buffer memory,*

(refer to fig. 14 and see "intermediate nodes may detect these packets (e.g., the reusability bit is reset), note the offsets of these packets, and preserve the respective offsets when recreating the frame [i.e., frame shown in fig. 14] (e.g., after adding packets from local input ports) for outbound traffic" recited col. 13 lines 43-47, noting that to perform these functions, intermediate nodes will have to *extract the header* and *the original data,* and *store* them in respective buffers, see for example "the transmit/receive queue" recited col. 16 lines 2-3, before passing the frame to downstream "outbound traffic"), *and*

Claim 5, *b4) analyzing the header to determine if said macropacket comprises a free portion sufficient for addition thereto of said data packet* (refer to fig. 14 and see "the payload header 104a may be used to tell whether one or more of the empty packets 222a-222n [shown in fig. 14] inside the SONET SPE 200 may be reused at an intermediated node" recited col. 13 lines 19-21, and further refer to fig. 16 for details of

header "204a" wherein a "packet identifier 280" shows "0000 null packet" indicating "a null packet may indicate that the payload area may be reused" recited col. 14 lines 10-11. Jha however does not disclose analyzing the header *by means of a state machine*, which will be discussed in subsequent paragraphs).

Claim 6, *b4) measuring in said transit buffer memory the absence of data signals ... to determine if said macropacket comprises a free portion sufficient for addition thereto of said data packet* (see "if there is a frame in the transmit/receive queue, the node checks the frame to see if there are unused areas in the queued frame that can be used for sending data. If there is enough space available in the frame, the node fills the space with additional data" recited col. 16 lines 2-6).

Claim 7, *method according to claim 5, wherein the step c) comprises the following steps:*

c1) modifying said header stored in buffer memory as a function of said data packet to be added to the macropacket (refer to fig. 18 and see "much of the HDT [hybrid data transport] processing is generally related to processing of the header to identify the type of packet and then passing the processing of the header to identify the type of packet and then passing the starting address of data bytes to standard logic for handling the individual packet type" recited col. 15 lines 23-26),

c2) transmitting ... a new macropacket comprising said modified header, said original data and said data packet that was previously stored in a data buffer memory (see "intermediate nodes may detect these packets (e.g., the reusability bit is reset), note the offsets of these packets, and preserve the respective offsets when recreating

the frame (e.g., after adding packets from local input ports) for outbound traffic" recited col. 13 lines 43-47),

c3) converting said new macropacket into an optical signal to be transmitted over the network (it is a necessary step in Jha's system since it is about a "hybrid data transport scheme over optical networks" recited col. 1 lines 1-2).

(Jha does not disclose for step c2) above that said transmitting is *under the control of said state machine*, which will be further discussed below).

Claim 8, *method according to claim 5, wherein the step c) comprises the following steps:*

c1) modifying said header stored in buffer memory as a function of said data packet to be added to the macropacket (refer to fig. 18 and see "much of the HDT [hybrid data transport] processing is generally related to processing of the header to identify the type of packet and then passing the processing of the header to identify the type of packet and then passing the starting address of data bytes to standard logic for handling the individual packet type" recited col. 15 lines 23-26),

c2) deleting the original header with the aid of a switch situated upstream or downstream,

c3) constructing ... a new macropacket resulting from the construction of said modified header, said original data and said data packet that was previously stored in the data buffer memory.

(refer to fig. 19 see ***a.*** step 402 "Rx (receive) packet from system", ***b.*** step 406 "create payload header", which will have to delete the original header, ***c.*** the

unnumbered step but labeled as "get offset of first available area", ***d.*** step 410 "available length >= packet length ?", **e.** out of "YES" of step 410 and "store packet. Create null SDL packet in remaining area", and finally ***f.*** "packet in buffer ready for Tx [transmission]").

Jha does not disclose however that step c2) is done with the help of a *delay line* and step c3) is done *under the control of said state machine* and *original data delayed by said optical delay line*, which will all be discussed further below).

Claims 12/13, *System comprising means adapted to implement the steps of the method according to claim 1/4.* (see fig. 10 depicting system configuration and fig. 13 depicting the principle of the method the system shown in fig. 10 implements).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2, 5, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jha (US 7,006.525) in view of Mestdagh et al (US 5,331,316).

Jha discloses the claimed limitations in paragraph 6 above. Jha does not disclose the following features:

Claim 2, received data by intermediate node are delayed by *a delay line*.

Claim 5, analyzing a header by means of *a state machine*.

Claim 7, transmitting data under the control of *said state machine*.

Claim 8, deleting header with the help of *said delay line*, constructing new macropacket under the control of *said state machine* and original data delayed by *said optical delay line*.

Mestdagh discloses a "communication system including allocating free signaling channels to individual substations having data to transmit" (col. 1 lines 2-4) comprising the following features:

Claim 2, received data by intermediate node are delayed by *a delay line* (fig. 3 the item labeled "D" in the lower middle part of the fig. and see "a delay circuit D" recited col. 7 line 20).

Claim 5, analyzing a header by means of *a state machine* (fig. 3 the item immediately above the item labeled "D" and see "a finite stat machine FSM which has inputs AC, DE, SB, MY, ND, WD, CO and ETC and outputs G (grant), C (check), E (echo), R (request), S (selection) and AC (active), the latter output being fed back to the line named input AC via the delay circuit D" recited col. 7 lines 21-25).

Claim 7, transmitting data under the control of *said state machine* (fig. 3 the item immediately above the item labeled "D" and see "a finite stat machine FSM which has inputs AC, DE, SB, MY, ND, WD, CO and ETC and outputs G (grant), C (check), E (echo), R (request), S (selection) and AC (active), the latter output being fed back to the line named input AC via the delay circuit D" recited col. 7 lines 21-25).

Claim 8, deleting header with the help of *said delay line*, constructing new macropacket under the control of *said state machine* and original data delayed by *said optical delay line* (for the *delay line* part see fig. 3 the item labeled "D" in the lower middle part of the fig. and see "a delay circuit D" recited col. 7 line 20; for the *state machine part*, see fig. 3 the item immediately above the item labeled "D" and see "a finite stat machine FSM which has inputs AC, DE, SB, MY, ND, WD, CO and ETC and outputs G (grant), C (check), E (echo), R (request), S (selection) and AC (active), the latter output being fed back to the line named input AC via the delay circuit D" recited col. 7 lines 21-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system/method of Jha by adding the delay line and state machine of Mestdagh to Jha in order to provide a more robust mechanism for yet "a less complex communication system of the above [optical] type, particularly by the voidance of such additional receiver and transmitter in each substation" as pointed out by Mestdagh (col. 1 lines 51-53).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,330,222 provides a traffic control apparatus and method used in an exchange wherein empty incoming cells are detected for containing no significant information.

US 4,237,533 discloses data packet multiplexing in a staggered fashion using delayed flip-flop circuit.

US 5,140,587 provides a broadband ring communication system and access control method using empty (free) data slot.

US 2004/0018016 discloses optical transport networks wherein optical and electronic data are converted from one another for signal procession.

US 4,636,029 provides a system to detecting tapping of light energy from an optical fiber by detecting optical signal power level.

US 5,214,640 provides a high-speed packet switching system using empty packet detector in conjunction with main line delay circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Lai whose telephone number is 571-272-9741. The examiner can normally be reached on M-F 7:30-5:00 EST, Off alternative Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AL

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER